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Current State Regulations

10 CSR 80-2.010 Definitions

10 CSR 80-2.015 Site characterization

10 CSR 80-2.020 Permitting

10 CSR 80-2.030 Closure/Post-closure/FAI

10 CSR 80-11.010 UWLF Design and Operation

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Current State Regulations

State definition of *utility waste*

- Utility waste means fly ash waste, bottom ash waste, slag waste and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels

Federal definition of *coal combustion residuals (CCR)*

- Fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers

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Current State Regulations

Material is essentially the same in both definitions

Key differences in definitions:

State definition includes larger universe of facilities

- **Combustion of other fossil fuels**
- **Purposes other than generation of electricity**
- **Facilities other than electric utilities**

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Current State Regulations

Other aspects of Chapter 2

- **Permitting requirements**
- **Beneficial use (exemptions)**
- **Closure/post-closure**
- **Financial Assurance Instruments (FAIs)**

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Current State Regulations

Regulations of CCR surface impoundments

Effective July 30, 1997:

2.020(9) Permit Exemptions.

(A) The following types of activities, solid waste disposal areas or solid waste processing facilities are not required to obtain a permit provided that pollution, a public nuisance or a health hazard is not created:

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Current State Regulations

2.020(9)(A)7

The operation and/or closure of a waste stabilization lagoon, settling pond or other water or wastewater treatment facility which has a permit from the Missouri Clean Water Commission even though the facility may receive solid or semisolid waste materials so long as the facility complies with the provisions of 10 CSR 80-2.030(2)(B) regarding filing of the survey plat upon closure. A solid waste disposal area construction and operating permit shall be required for settling ponds intended for the permanent disposal of utility waste and where the owner/operator applies for a construction permit or approval from the Missouri Clean Water Commission after the effective date of this rule;

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Current State Regulations

10 CSR 80-2.030(2)(B)

When required by subsection (2)(A) of this rule, the person found in violation shall submit, for departmental approval, a survey plat or detailed description of the open dump, unpermitted solid waste disposal area or unpermitted solid waste processing facility prior to filing with the county recorder of deeds in the county where the open dump, unpermitted solid waste disposal area or unpermitted solid waste processing facility is located.

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Current State Regulations

Survey plat or detailed description

- Statement of closure on department's forms

No specific closure requirements

Recommendations

- Dewater
- Grade surface to drain (adequate slope)
- Cover with soil
- Vegetate
- Record in chain of title

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Current State Regulations

Closure of inactive or existing CCR surface impoundments

- **In accordance with the federal rule**

Closure of CCR surface impoundments dewatered before Oct. 19, 2015

- **Follow MoDNR recommendations 2.020(9)(A)7**

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Current State Regulations

No other current rules addressing CCR surface impoundments

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Current State Regulations

Chapter 11 Utility Waste Landfill Design & Operation

- Effective July 30, 1997
- Many requirement N/A to Utility Waste Landfills (UWLF) already in existence on that date
- Letters sent to UWLF owners in November 1997

UWLFs permitted after July 30, 1997 closer to complying with federal rule

- Site location restrictions
- Detailed site investigation/ground water (GW) monitoring (partially)
- Closure and Post-closure plans
- Surface water control systems

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Current State Regulations

More stringent aspects of Chapter 11

- **Construction quality assurance (CQA)**
- **Financial assurance**
- **Survey control**
- **Operating manuals**
- **Easement, notice and covenant**
- **Closure survey plat**

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Current State Regulations

Less stringent aspects of Chapter 11

- **Site location restrictions not included:**
  - **Seismic impact zones**
  - **GW separation**
- **Liners**
- **Final cover**
- **Inspections**
- **GW monitoring**
- **Closure/post-closure**

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New State Regulations?

What can we say about revised state regulations?

Key changes under consideration:

- **Adopt the term ‘coal combustion residuals’**
- **Drop ‘other fossil fuels’ from definition**
- **Keep other coal-burning electric power plants under Chapter 11**
- **Clarify that waste from other fossil fuels and other plants is still regulated**

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New State Regulations?

What can we say about revised state regulations?

Other state definitions will be aligned with those in the federal rule

- Aquifer, uppermost aquifer
- Beneficial use
- Horizontal expansion

Federal definitions need to be added into state rules

- CCR units (landfill, surface impoundment, piles, etc.)

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New State Regulations?

What can we say about revised state regulations?

Entirely new chapter addressing surface impoundments

or

Revise Chapter 11 to address landfills and surface impoundments

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New State Regulations?

What can we say about revised state regulations?

A revised Chapter 11 will resemble Chapter 3 (SLFs)

- Liners
- Leachate collection systems
- Final cover systems (similar)
- GW monitoring/corrective action
- Surface water control
- Closure/post-closure

The DSI process is <u>not</u> likely to change substantially

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New State Regulations?

What can we say about revised state regulations?

More stringent requirements in Chapter 11 are likely to remain in effect, with revisions. These include :

- **Financial assurance**
- **CQA**
- **Survey control**
- **Operating Manuals**
- **Survey plats**
- **Easement, Notice and Covenant**

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New State Regulations?

What can we say about revised state regulations?

Most aspects of surface impoundment regulations will closely mirror landfill regulations

- Siting criteria
- Liners
- Final cover
- DSI process
- GW monitoring
- Financial assurance
- CQA
- Air quality
- Operating manuals
- Survey control
- Survey plats
- Easements

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New State Regulations?

What can we say about revised state regulations?

Several major aspects of surface impoundment regulations will be significantly different than landfill regulations

Hydrologic/hydraulic aspects
- Hazard potential classification
- Inflow/outflow designs

Structural integrity (FS, seismic designs, etc.)

Related Inspections

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New State Regulations?

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Impact on Existing UWLFs

Missouri Geological Survey needs to be involved in:

- **Any subsurface site characterization work on a permitted site**
- **Location/installation of new GW monitoring wells**
- **GW separation demonstration**
- **General interpretation of subsurface data**

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Impact on Existing UWLFs

Solid Waste Management Program (SWMP) needs to be involved in:

- **Development of any demonstration, plan, design, associated with a permitted UWLF**

Recommendations:

- **Submit information with content and format ready to place into operating record to satisfy federal criteria**
- **Post it in your operating record**
- **Revise after comments by SWMP**

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Impact on Existing UWLFs

MoDNR cannot determine whether or not something does or does not comply with federal regulations

- **Any comments or statements by MoDNR staff related to federal rule will be opinions**

MoDNR evaluations:

- **Interpretation of analyses/data**
- **Impact on operations**
- **Protection of state water and land resources**
- **Compliance with current state regulations**

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Impact on Existing UWLFs

Key points to iron out:

GW separation (future phases/effects)
Seismic analyses

Site characterization (DSI)

Location of groundwater monitoring wells for phased facilities link to pdf

Final cover system designs

Impact on Existing Surface Impoundments

Closure of existing CCR surface impoundments

- Must contact Water Protection Program (WPP) prior to closure in all cases
- Must contact SWMP prior to closure with material in place

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Impact on Existing Surface Impoundments

SWMP needs to be involved in:

Development of any demonstration, plan, design, associated with an existing CCR surface impoundment

Hydrologic/hydraulic design and structural integrity analyses will require cooperation of both parties

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Beneficial Use of CCR

General exemptions 10 CSR 80-2.020(9)(A)

(9)(A)5 The use of solid waste in the processing or manufacturing of products (asphalt shingles, gypsum wallboard, sandblast media)

(9)(A)11 Bottom ash or boiler slag for traction control on snow and ice

(9)(A)12 Fly ash as concrete or flowable fill additive

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Beneficial Use of CCR

Site-specific exemptions 10 CSR 80-2.020(9)

(9)(B) Generic beneficial use of solid waste

(9)(F) Fly ash, bottom ash, boiler slag for road base construction (two feet)

Structural fill (two feet; five acres)

(9)(G) Type C fly ash as soil amendment (six inch mixture)

soil stabilization(two feet; five acres)

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Beneficial Use of CCR

Site-specific exemptions 10 CSR 80-2.020

(9)(H)	Department may approve quantities in excess of those specified in (9)(F) and (G) (permit or exemption from Missouri Clean Water Commission)
(9)(I)	Landfill daily cover

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Beneficial Use of CCR

Statewide general beneficial use exemptions (GBUEs)

Currently several issued to:

- Utilities
- Material distributors
- MoDOT

Status is uncertain – discussions in progress

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Beneficial Use of CCR

Federal definition

Beneficial use of CCR means ***the CCR meet all of the following conditions:***

(1) The CCR must provide a functional benefit;

(2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;

(3) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

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Beneficial Use of CCR

(4) When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

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Beneficial Use of CCR

Unencapsulated beneficial uses

Unencapsulated uses of CCR are numerous and range, in total use, from hundreds of thousands of tons to millions of tons per year. These applications include, as examples, the following:

(1) Flowable fill
(2) structural fills
(3) soil modification/stabilization
(4) waste stabilization/solidification
(5) use in agriculture as a soil amendment
(6) aggregate

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Beneficial Use of CCR

SWMP's interpretation is that the EPA looks upon the following beneficial uses favorably:

- **Encapsulated beneficial uses**
  - **Substitute for Portland cement in concrete mixture**
  - **Substitute for natural gypsum in wallboard**
- **Unencapsulated beneficial use in roadway applications (state and federal highway projects)**

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Beneficial Use of CCR

EPA's view of other unencapsulated beneficial uses is uncertain:

Traction control on snow and ice

- **Quantity calculated?**
- **Storage**
- **Application**

Surface coating on asphalt shingles

- **Quantity calculated?**
- **Manufacturing process (imbedded in emulsion?)**

Sandblast media

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Beneficial Use of CCR

Who is ultimately responsible for beneficial use?

Supplier?

Distributor?

End user?

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Beneficial Use of CCR

Unencapsulated beneficial uses in large quantities

Difficulty lies in making environmental demonstration

Environmental releases comparable to/lower than releases from analogous materials

or

Environmental releases will be at or below relevant regulatory and health-based benchmarks

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Beneficial Use of CCR

What is a release?

- Any CCR placed into the environment
- Any contamination which leaches from CCR

What are relevant regulatory/health-based benchmarks?

- Federal MCLs (leaching)
- State water quality standards (leaching)
- MRBCA standards (solids/GW look-up tables)

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Beneficial Use of CCR

The role of groundwater monitoring in beneficial use applications

WPP may require GW monitoring

Department does not consider GW monitoring to be appropriate for environmental demonstrations

Environmental demonstrations are intended to be preventative